

## **ATTACHMENT A**

# **DRAFT MANAGEMENT PLAN**

## **Proposed Marshall Creek Wildlife Management Area**

### **INTRODUCTION**

Montana Fish, Wildlife and Parks (FWP) proposes to purchase fee-title ownership of lands to establish the 24,170-acre Marshall Creek Wildlife Management Area (WMA). This draft management plan discloses FWP's management intent for public review and comment, and for documenting existing information for future reference. This document conveys interim management policies and strategies for the property while the long term management plan is developed.

#### **Goals:**

- Permanently protect and restore critical native fish and wildlife habitat;
- Provide perpetual public access to lands with high and diverse public recreation values;
- Maintain landscape connectivity between the Bob Marshall/Scapegoat and Mission Mountain wildland complexes;

#### **I. ACQUISITION DATE**

FWP proposes to acquire the property in two phases beginning in the fall of 2010, pending public review and approval.

#### **II. CHAIN OF OWNERSHIP**

Plum Creek Timber Company Timber (PCTC) is the current landowner. The subject parcel is under contract for sale to The Nature Conservancy (TNC) and The Trust for Public Land (TPL) as part of the 310,000-acre Montana Legacy Project. TNC/TPL plans to acquire the property in November 2010. FWP proposes to purchase a portion of the Marshall Creek WMA from TNC/TPL soon after and purchase the remainder of the property in the spring of 2011 when additional federal grant funds become available. Upon project completion, TNC/TPL will retain no title to or encumbrance on any portion of the property.

#### **III. PROPERTY DESCRIPTION**

##### **Location:**

The land lies in the upper Clearwater drainage of the Blackfoot watershed, approximately 5 miles northwest of the community of Seeley Lake in Missoula County. The property includes all or part of the West Fork Clearwater River, Marshall Creek, Deer Creek, Uhler Creek, and the North Fork of Placid Creek (Figure 1).

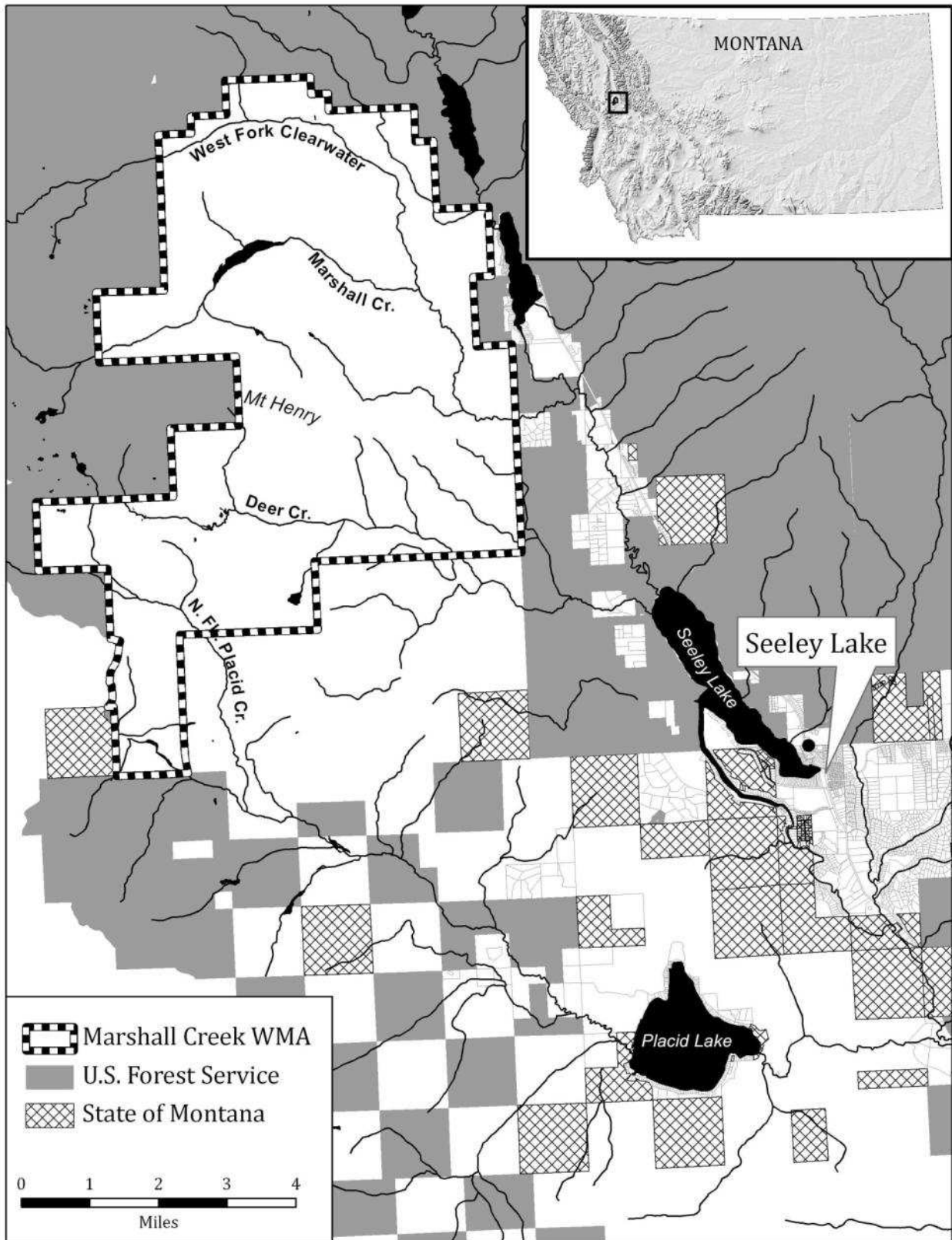


Figure 1. Location of the proposed Marshall Creek WMA within the Clearwater watershed.

**Acreage Deeded:**

Marshall Creek WMA would encompass 24,170 contiguous acres. There are no in-holdings within the proposed WMA boundary.

Missoula County:     T17N, R16W Sections 1-4, 8-21, 30, and 31  
                              T17N, R17W Section 13  
                              T18N, R16W Sections 14-17, 20-23, 25-29, and 31-36

**Acreage Leased:**

There would be no leased acres associated with the WMA.

**IV.    LANDFORMS AND DRAINAGE**

The West Fork Clearwater River, Marshall Creek, Uhler Creek, and Deer Creek run roughly east from their high elevation sources to their confluences with the main stem Clearwater River and lakes system. The North Fork of Placid Creek runs south to its confluence with the main stem of Placid Creek. The 81-acre Lake Marshall, fed by Marshall Creek, lies in the northwest portion of the property. Elevations on the property range from 2400 feet near the lower West Fork Clearwater River to over 6600 feet at the summit of Mt. Henry in the center of the property. As part of a large, undeveloped forested corridor--surrounded by large tracts of undeveloped public and private land--the property provides links to the Bob Marshall/Scapegoat and Mission Mountains wildland complexes.

**V.     VEGETATION**

The property is almost completely forested (Table 1). Stands consist of boreal spruce-fir types in addition to Douglas fir and lodgepole pine types on the drier aspects. Previous owners have commercially harvested timber on the property for more than 50 years and most stands are in some stage of regeneration. In addition, 2,230 acres in the southern portion of the property burned in the Jocko Lakes wildfire of 2007. In the past, extensive re-planting occurred following harvest; western larch was preferred in both re-planting and seed-tree retention treatments. Understories tend to be complex and often consist of conifer (spp.), huckleberry (spp.), alder, false huckleberry, snowbrush, willow, serviceberry, mountain-lover, beargrass, and true grasses.

Riparian corridors are generally intact along stream courses throughout the property. Riparian plant communities typically consist of mixed conifer stands with alder and willow dominated understories.

**Land Use:**

Past commercial use of the property was almost exclusively for timber harvest. Livestock grazing has not occurred in recent times. The property is highly valued for recreation, including hunting, fishing, snowmobiling, hiking, camping, and sightseeing. The US Forest Service (and the public wanting to access Forest Service land) uses selected roads to access its ownerships adjacent to the property. This use is managed under cost-share road agreements which would be re-negotiated with FWP following purchase.

**Vegetation Condition:**

Most upland stands have been subject to timber harvest within the last 50 years and are in some stage of regeneration. Riparian buffers were generally maintained along perennial streams by

limiting harvest of timber. Harvest treatments of uplands varied, but included even-age harvest, shelterwood cuts, seed-tree retention harvest, and selective harvest (both helicopter and skid/cable). Re-planting and selection favored western larch; this species now predominates many stands. The property is generally very productive and regeneration is relatively rapid.

Table 1. Summary of cover types and their approximate acreage amounts based upon land-cover mapping completed by FWP staff.

<b>Level 1 Cover Type</b>	<b>Acres</b>	<b>% Cover</b>
Forest and Woodland	16,271	66.9
Transitional Vegetation	4,331	17.8
Shrubland and Grassland	3,476	14.3
High Montane	164	0.7
Open Water	81	0.3
	24,323	100.0
<b>Level 2 Cover Type</b>	<b>Acres</b>	<b>% Cover</b>
Western North America Cool Temperate Forest	12,323	50.7
Harvested Forest	4,331	17.8
Western North America Flooded and Swamp Forest	3,948	16.2
Vancouverian and Rocky Mountain Grassland and Shrubland	3,431	14.1
Western North America Alpine Scrub, Forb Meadow and Grassland	164	0.7
Open Water	81	0.3
Shrubland and Grassland	22	0.1
Western North America Freshwater Marsh	22	0.1
North American Bog and Fen	1	0.0
	24,323	100.0

### **Weeds and Forest Pathogens:**

Noxious weed infestations on the property are limited and primarily consist of spotted knapweed that occurs along road shoulders. Knapweed is more prevalent on the southern portion of the property that burned in 2007 but still largely associated with the road system. Missoula County Weed District is preparing a weed management plan for the property that will help FWP direct weed treatments over time.

Bark beetle (spp.), budworm, and other forest pathogen infestations are limited on the property. Most stands are early-to-mid seral and less susceptible species such as larch, subalpine fir, spruce, and deciduous species currently dominate.

## **VI. EXCEPTIONAL HABITAT QUALITIES**

The proposed Marshall Creek WMA property lies within the *Tier 1* (most crucial) *Blackfoot River Aquatic Focus Area* and the *Tier 1 Mission/Swan Valleys & Mountains Terrestrial Focus Area* as identified in Montana's Comprehensive Fish and Wildlife Conservation Strategy (CFWCS, 2005). The property provides habitat for over 150 native species, including > 30 CFWCS *Tier 1* and *Tier 2 Species of Greatest Conservation Need*. The mid-elevation mesic forests on the property are extremely productive and contain relatively scarce mid-elevation

boreal forest types. The property is uniquely located between two of the largest wildland complexes in Montana and is mostly surrounded by protected public land; the property serves as a critical connective corridor between these large blocks of conservation land. In addition, the property itself is exceptional habitat for federally *Threatened* Canada lynx, contains significant federally designated Recovery Area for *Threatened* grizzly bear populations, and is critical spawning and rearing habitat for a unique adfluvial life form of federally *Threatened* bull trout populations. The property contains the most crucial, currently unprotected Canada lynx habitat in the western US and is designated *Lynx Critical Habitat* by the USFWS.

The property lies within a matrix of protected lands managed by the US Forest Service (USFS) and the Confederated Salish and Kootenai Tribes. Recent research findings (wolverine, lynx, and grizzly bears in particular), FWP strategic conservation assessments, and independent movement corridor analyses have all identified the property as lying within a crucial corridor connecting the Bob Marshall/Scapegoat and Mission Mountains wildland complexes. Conservation of the property will also maintain habitat connectivity along the Mission Mountains connecting the Swan Valley, the Rattlesnake Wilderness, and Bitterroot mountain ecosystem.

#### **Fisheries and Wildlife:**

The property supports three federally ESA-listed species--grizzly bear, Canada lynx, and bull trout--as well as candidate species including fisher, wolverine, and westslope cutthroat trout. Important populations of bull trout spawn in the property's streams. Many bull trout have a unique adfluvial (lake-migrant) life history. The property also has resident and migratory populations of westslope cutthroat trout. Westslope cutthroat trout populations have high genetic purity (generally < 1% rainbow trout contribution). There are also regionally important populations of western pearlshell mussels, a Montana Species of Concern. The property is heavily used by grizzly bears and Canada lynx.

The property provides high-quality and highly valued hunting opportunity for elk, white-tailed deer, mule deer, moose, black bear, mountain lion, wolf, furbearers, and mountain grouse. It also supports a wide array of fish and wildlife Species of Concern in Montana and the nation. A partial list of fish and wildlife species and species of concern known or expected to occur on the property are included in Appendices A and B.

### **VII. RECREATION**

The property has historically been open to public use for hunting, fishing, camping, hiking, snowmobiling, sightseeing, and other activities and this access is highly valued. Under FWP ownership, recreational access to and through the property would be maintained and managed similar to current practices.

### **VIII. IMPROVEMENTS AND DEVELOPMENTS**

The property would be conveyed in a single contiguous block without in-holdings. Several roads are subject to easements or cost-share maintenance agreements with PCTC or the USFS. The only commercial development on the property is a single microwave tower on West Fork Point; an access easement to the tower carries with the deed, but FWP does not assume a lease or liability for the tower. Many improvements (primarily associated with the road system) come with the property including roads, bridges, and water control structures.

## MANAGEMENT OVERVIEW

Management of the Marshall Creek WMA would be for the enhancement and protection of native fish and wildlife populations, the habitat that supports them, and for the provision of public recreational access. FWP's Fish and Wildlife Division would direct management at the Regional level with program direction from the Fisheries and Wildlife Bureaus. Public access would be provided to the extent that such access is compatible with vegetation, fish and wildlife goals. Vegetation management (including commercial timber harvest, prescribed fire, and riparian vegetation restoration) or other land use practices may be prescribed if needed to enhance the fish and wildlife values of the property. FWP would cooperate with adjoining landowners on noxious weed management, fence maintenance, historic and necessary road access, and other issues common to the local community. In the near term, FWP expects recreation management to maintain the *status quo* pending ongoing field assessments. FWP expects to contract for a comprehensive forest inventory and forest management plan in 2011. Forest restoration and management activities will be prioritized, based on identified need and available resources.

Stream and watershed restoration will be an emphasis on the property, with prioritization of projects based on ongoing inventories and the needs of native fish species. Restoration activities will primarily focus on mitigating or eliminating impacts of the extensive road network on water quality, natural stream function and riparian integrity.

### **I. PUBLIC ACCESS AND USE**

- Marshall Creek WMA will be open to public use year-round for motorized travel on open roads, snowmobiling, hunting, fishing, camping, hiking, horseback riding, mountain bicycling, and general enjoyment.
- Wheeled motorized vehicles will be restricted to the designated open road system (no wheeled motorized vehicles allowed off roads or on closed roads) year-round. Currently, approximately 37 miles of the 290 miles of road on the proposed WMA are open to wheeled motorized use (Figure 2); the open road system will initially be similar to that existing at time of purchase. FWP is conducting a detailed assessment of road condition, sediment delivery and drainage, and administrative need; results of this assessment will guide future decisions about road access, removal, and/or upgrading. FWP will continue to maintain open road density below 1mi./1mi.<sup>2</sup> to protect grizzly bear security cover.
- Snowmobiling will be allowed throughout the WMA but will be restricted to designated open roads 4/1 – 11/30. FWP will continue to cooperate with the Seeley Lake Driftriders, the USFS, and PCTC to maintain and enhance the groomed snowmobile trail system.
- Camping will be allowed year-round but limited to a 14-day maximum stay (motorized vehicles restricted to the road shoulder or pullouts). Fire restrictions may be implemented, as wildfire-risk dictates.
- Consistent with past and current use-patterns, use of non-motorized watercraft will be emphasized on Lake Marshall.
- Firewood cutting will be restricted to downed trees that lie outside riparian areas and will only be allowed by FWP-issued permit.

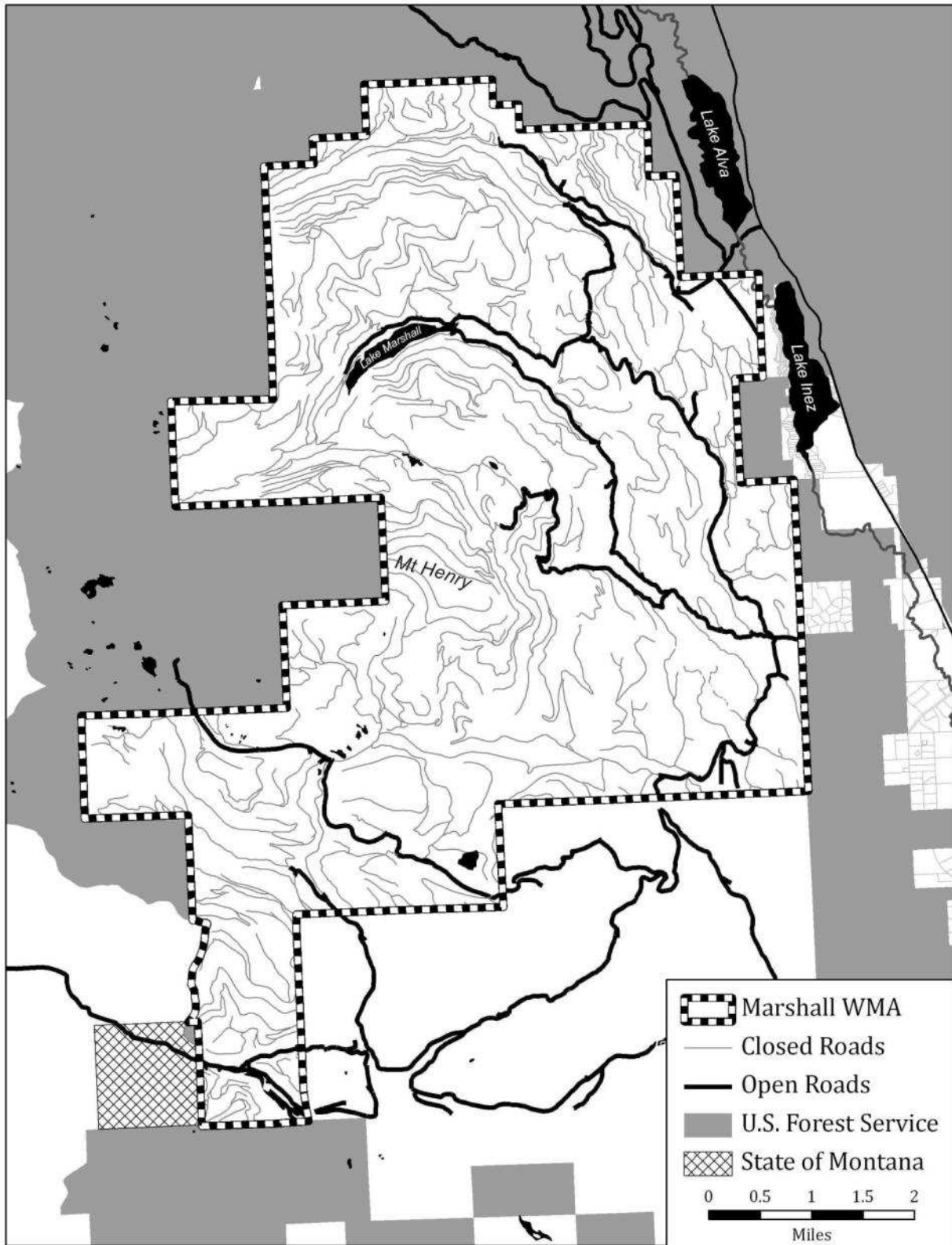


Figure 2. Roads on the proposed Marshall Creek WMA currently open and closed to wheeled motorized travel.

- Permits will be required for use by groups of more than 15 people.
- Hunting opportunity will be managed consistent with that in the surrounding hunting districts (i.e. deer/elk Hunting District 285); no Marshall Creek WMA-specific hunting regulations are anticipated. Fishing and trapping opportunities will be managed consistent with current Montana regulations.

Issues:

- Road maintenance to reasonably support public travel and ongoing property management will constitute a significant and recurring expense. The maintenance standard for open roads will be to reasonably accommodate a 4-wheel drive vehicle with good ground clearance and to limit significant sediment delivery to streams. This standard is now generally met on the open road system, but will require regular maintenance.
- Much of the open road system has historically been managed under cost-share agreements with the US Forest Service. FWP will renegotiate these agreements (which provide for shared road access and maintenance liability) following transition of ownership.
- Roads and culverts are currently being inspected for compliance with Best Management Practices (BMPs) and compatibility with fish and wildlife habitat values; any noncompliance or resource needs will be corrected on a prioritized basis.
- Maintenance of gates and barriers will be required to restrict motorized vehicle access to the closed road system.
- Signage will be required at the main access points to communicate the public access and other regulations on the WMA.
- Boundary signage will be needed to identify the WMA property line in some places.
- Hardcopy brochures and FWP website updates will need to be prepared to communicate regulations and provide basic road maps for the public.

## **II. FISHERIES MANAGEMENT**

Fisheries management concerns on the property consist of: (1) maintaining and improving the Lake Marshall sport fishery through stocking of westslope cutthroat trout, monitoring, and adjustment of harvest regulations, and (2) protection and restoration of stream and riparian habitats that are vital for native trout spawning and rearing. Streams on the property provide limited sport fisheries for trout, but primarily serve as nursery areas for migratory native trout populations and other sensitive species. No fishing regulation changes are currently proposed on the property.

## **III. WATERSHED RESTORATION NEED**

The Marshall Creek WMA contains three primary tributary stream drainages: West Fork Clearwater River, Marshall Creek and Deer Creek. Despite high road densities and disturbance associated with past land management, the abundance of bull trout, westslope cutthroat trout and other sensitive species is an indication of the high water quality and relatively intact habitat in these watersheds.



To further enhance stream habitat and aquatic populations, restoration work will focus on improving selected aspects of the road system to reduce: (1) chronic sediment inputs, (2) failure risk of culverts and water management features on roads, and (3) impacts of road encroachment on stream corridors. A few locations will also require replacement or removal of stream crossings to enhance connectivity for migrating fish and promote natural stream processes. Ongoing assessments of the road system will facilitate completion of a prioritized watershed restoration projects list. These projects would be completed after acquisition as funding allows.

#### **IV. LIVESTOCK GRAZING**

The WMA property does not have a recent history of livestock grazing and no grazing leases are associated with the property. FWP will only consider allowing livestock grazing in the future if it is intended to enhance or restore habitat condition for fish and wildlife.

#### **V. NOXIOUS WEED MANAGEMENT**

Noxious weed management would be conducted in accordance with the Montana Weed Management Plan (2008). The Missoula County Weed District will conduct a field assessment of the property and work with FWP to develop a Weed Management Plan by fall 2010.

Currently, weed infestations are largely limited to road shoulders and other disturbed sites. Spotted knapweed is the predominant noxious weed species on the property. Spotted knapweed is somewhat more widespread in the southern portion of the property burned in the 2007 Jocko Lakes fire.

Any isolated patches of early invading species will be eradicated by the most efficient and effective means (e.g., hand-pulling, digging or herbicide spot treatment), depending on weed species and site limitations. Roadsides will be inspected annually for the purpose of detecting and eradicating any new weed introductions before infestations become established. FWP's priority for herbicide control of noxious weeds on the subject lands will be to spray roadsides and recent logging landings, skid trails, and other disturbed sites.

Roadside spraying and annual inspections (with spot eradications) are important strategies to prevent new weed establishments and spread. As an additional preventive measure, FWP will confine public wheeled motorized traffic to the open road system and will otherwise work to limit disturbance of the soil surface.

Livestock feed brought onto the property will be required to be certified weed-seed free.

#### **VI. FOREST MANAGEMENT**

Most of the subject parcel has been actively managed for commercial timber production during the last 50 years. Recruiting and maintaining forest stands of the highest value for fish and wildlife will guide future management of the property. Specific forest management objectives will be:

1. Enhance and restore mature forested riparian stands to secure movement corridors for wildlife, provide optimum shading of streams, woody debris recruitment to channels, and to maximize sediment filtering. The provision of cool, clean and connected stream

corridors for the benefit of native fish will drive the management of forested riparian stands.

2. Recruit, enhance, and maintain multistoried, mature, mesic and boreal forest stands where they do or could occur on the WMA.
3. Maintain visual screening between existing and future forest management units adjacent to open roads.
4. Diversify the species and age composition of re-planted and regenerating stands to increase wildlife habitat values and more closely approximate the range of historic species/age stand composition.
5. Mitigate the risk of wildfire by managing fuel loads immediately adjacent to neighboring homes and established escape routes.

These management objectives will be met through a mix of both passive and active (commercial and non-commercial) management. FWP will use revenue from forest management activities for stewardship of its forested properties.

## **VII. FIRE PREVENTION AND SUPPRESSION**

Fire suppression on the Marshall Creek WMA will fall under existing jurisdictions, which currently is Montana Department of Natural Resources and Conservation (DNRC) protection. Wildfires would be subject to immediate suppression upon detection. In an attempt to prevent human-caused ignitions, FWP and DNRC may institute temporary measures to progressively restrict open campfires and public access to the property if and as summer-fall fire danger intensifies in some years.

Prescribed fire may be used as a wildlife habitat enhancement tool and for managing fuels in the forest understory, but only with public notice and in close coordination with DNRC, the US Forest Service, neighboring landowners and local fire management organizations.

## **VIII. GOOD NEIGHBOR**

- FWP would develop and maintain effective working relationships with neighboring landowners.
- Priority would be placed on addressing and responding to matters of signage, weed control, road maintenance, fuels mitigation, recreational-use management, and coordinated wildfire protection.

## **IX. MAINTENANCE BUDGET**

Following is a preliminary annual maintenance budget for the proposed Marshall Creek WMA:

**ROADS:** There are approximately 37 miles of the current open road system is in relatively good condition; FWP estimates open road and road closure maintenance costs to be approximately \$21,000 per year with special maintenance and improvement projects funded on a case-by-case basis. Most administratively closed roads would be managed to reduce sediment delivery to streams and to facilitate future property management activities. FWP is assessing sediment delivery mitigation needs; the extent of those needs and associated remediation costs are unknown. Projects to mitigate issues

with road and water control structure condition will be prioritized and implemented following the completion of the assessment. Road closure maintenance costs would decrease yearly as property management activities were completed.

**WEED CONTROL:** FWP estimates \$6,920/year for weed control (primarily road-side herbicide treatments).

**SIGNAGE:** Signage costs will be highest during the first years of ownership and could exceed \$20,000. After this time, FWP would only need to maintain informational, boundary, and road closure signs. Annual costs are expected to be less than \$2,040 per year.

**TAXES:** Will be approximately \$18,720/year, 5 year cost = \$93,600.

**FIRE PROTECTION:** Property is under MT DNRC fire protection. The annual assessment for fire protection will be approximately \$6,050/year.

Funding for ongoing operations and maintenance of the Marshall Creek WMA is expected to come from a combination of fish and wildlife license sales revenue, the Habitat Montana Program, and State funds set aside at purchase consistent with the Good Neighbor Policy (87-1-209, MCA).

FWP is also actively investigating additional sources of funds to support operations and maintenance activities on this (proposed) and other WMAs. One option FWP is evaluating is the potential to sell credits for carbon sequestration on the proposed Marshall Creek WMA property. FWP has begun evaluating this potential opportunity and, if we determine that it is feasible and consistent with habitat, public recreation, and timber management goals, then FWP may propose a future action to sell carbon credits in existing markets. Any such action proposed in the future would go through a separate decision-making process that complies with all relevant legal and public scoping requirements.

## APPENDIX A. Marshall Creek WMA Species List

Common Name	Scientific Name	State Rank
<b><i>Amphibians - 6 Species</i></b>		
Columbia Spotted Frog	<i>Rana luteiventris</i>	S4
Long-toed Salamander	<i>Ambystoma macrodactylum</i>	S4
Northern Leopard Frog	<i>Rana pipiens</i>	S1,S4
Pacific Treefrog	<i>Pseudacris regilla</i>	S4
Rocky Mountain Tailed Frog	<i>Ascaphus montanus</i>	S4
Western Toad	<i>Bufo boreas</i>	S2
<b><i>Birds - 183 Species</i></b>		
American Bittern	<i>Botaurus lentiginosus</i>	S3B
American Coot	<i>Fulica americana</i>	S5B
American Crow	<i>Corvus brachyrhynchos</i>	S5B
American Dipper	<i>Cinclus mexicanus</i>	S5
American Goldfinch	<i>Spinus tristis</i>	S5B
American Kestrel	<i>Falco sparverius</i>	S5B
American Pipit	<i>Anthus rubescens</i>	S4B
American Redstart	<i>Setophaga ruticilla</i>	S5B
American Robin	<i>Turdus migratorius</i>	S5B
American Three-toed Woodpecker	<i>Picoides dorsalis</i>	S4
American Wigeon	<i>Anas americana</i>	S5B
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S3
Bank Swallow	<i>Riparia riparia</i>	S5B
Barn Swallow	<i>Hirundo rustica</i>	S5B
Barred Owl	<i>Strix varia</i>	S4
Barrow's Goldeneye	<i>Bucephala islandica</i>	S4
Belted Kingfisher	<i>Megaceryle alcyon</i>	S5B
Black-backed Woodpecker	<i>Picoides arcticus</i>	S3
Black-billed Magpie	<i>Pica hudsonia</i>	S5
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	S4B
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	S5B
Black Swift	<i>Cypseloides niger</i>	S1B
Blue-winged Teal	<i>Anas discors</i>	S5B
Bobolink	<i>Dolichonyx oryzivorus</i>	S3B
Bohemian Waxwing	<i>Bombycilla garrulus</i>	S5N
Boreal Chickadee	<i>Poecile hudsonicus</i>	S3
Boreal Owl	<i>Aegolius funereus</i>	S4
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	S5B
Brown Creeper	<i>Certhia americana</i>	S3

Brown-headed Cowbird	<i>Molothrus ater</i>	S5B
Bufflehead	<i>Bucephala albeola</i>	S5B
Bullock's Oriole	<i>Icterus bullockii</i>	S5B
Calliope Hummingbird	<i>Stellula calliope</i>	S5B
Canada Goose	<i>Branta canadensis</i>	S5B
Canvasback	<i>Aythya valisineria</i>	S5B
Canyon Wren	<i>Catherpes mexicanus</i>	S4
Cassin's Finch	<i>Carpodacus cassinii</i>	S3
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	S4
Chipping Sparrow	<i>Spizella passerina</i>	S5B
Cinnamon Teal	<i>Anas cyanoptera</i>	S5B
Clark's Nutcracker	<i>Nucifraga columbiana</i>	S3
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	S5B
Common Goldeneye	<i>Bucephala clangula</i>	S5
Common Loon	<i>Gavia immer</i>	S3B
Common Merganser	<i>Mergus merganser</i>	S5B
Common Nighthawk	<i>Chordeiles minor</i>	S5B
Common Raven	<i>Corvus corax</i>	S5
Common Redpoll	<i>Acanthis flammea</i>	S5N
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B
Cooper's Hawk	<i>Accipiter cooperii</i>	S4B
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B
Dark-eyed Junco	<i>Junco hyemalis</i>	S5B
Downy Woodpecker	<i>Picoides pubescens</i>	S5
Dusky Flycatcher	<i>Empidonax oberholseri</i>	S5B
Dusky Grouse	<i>Dendragapus obscurus</i>	S4
Eared Grebe	<i>Podiceps nigricollis</i>	S5B
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S5B
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	S5
Flammulated Owl	<i>Otus flammeolus</i>	S3B
Fox Sparrow	<i>Passerella iliaca</i>	S5B
Gadwall	<i>Anas strepera</i>	S5B
Golden-crowned Kinglet	<i>Regulus satrapa</i>	S5
Golden Eagle	<i>Aquila chrysaetos</i>	S3
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S3B
Gray Catbird	<i>Dumetella carolinensis</i>	S5B
Gray Jay	<i>Perisoreus canadensis</i>	S5
Great Blue Heron	<i>Ardea herodias</i>	S3
Great Gray Owl	<i>Strix nebulosa</i>	S3
Great Horned Owl	<i>Bubo virginianus</i>	S5

Green-winged Teal	<i>Anas crecca</i>	S5B
Harlequin Duck	<i>Histrionicus histrionicus</i>	S2B
Hairy Woodpecker	<i>Picoides villosus</i>	S5
Hammond's Flycatcher	<i>Empidonax hammondi</i>	S4B
Hermit Thrush	<i>Catharus guttatus</i>	S5B
Hooded Merganser	<i>Lophodytes cucullatus</i>	S4
Horned Grebe	<i>Podiceps auritus</i>	S3B
Horned Lark	<i>Eremophila alpestris</i>	S5
House Finch	<i>Carpodacus mexicanus</i>	S5
House Wren	<i>Troglodytes aedon</i>	S5B
Killdeer	<i>Charadrius vociferus</i>	S5B
Lazuli Bunting	<i>Passerina amoena</i>	S4B
Least Flycatcher	<i>Empidonax minimus</i>	S5B
Lesser Scaup	<i>Aythya affinis</i>	S5B
Lewis's Woodpecker	<i>Melanerpes lewis</i>	S2B
Lincoln's Sparrow	<i>Melospiza lincolnii</i>	S5B
Long-billed Curlew	<i>Numenius americanus</i>	S3B
Long-eared Owl	<i>Asio otus</i>	S5
MacGillivray's Warbler	<i>Oporornis tolmiei</i>	S5B
Mallard	<i>Anas platyrhynchos</i>	S5
Marsh Wren	<i>Cistothorus palustris</i>	S5B
Merlin	<i>Falco columbarius</i>	S4
Mountain Bluebird	<i>Sialia currucoides</i>	S5B
Mountain Chickadee	<i>Poecile gambeli</i>	S5
Mourning Dove	<i>Zenaida macroura</i>	S5B
Nashville Warbler	<i>Vermivora ruficapilla</i>	S5B
Northern Flicker	<i>Colaptes auratus</i>	S5
Northern Goshawk	<i>Accipiter gentilis</i>	S3
Northern Harrier	<i>Circus cyaneus</i>	S4B
Northern Pintail	<i>Anas acuta</i>	S5B
Northern Pygmy-Owl	<i>Glaucidium gnoma</i>	S4
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	S5B
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	S4
Northern Shoveler	<i>Anas clypeata</i>	S5B
Northern Shrike	<i>Lanius excubitor</i>	S5N
Northern Waterthrush	<i>Seiurus noveboracensis</i>	S5B
Olive-sided Flycatcher	<i>Contopus cooperi</i>	S4B
Orange-crowned Warbler	<i>Vermivora celata</i>	S5B
Osprey	<i>Pandion haliaetus</i>	S5B
Ovenbird	<i>Seiurus aurocapilla</i>	S4B
Peregrine Falcon	<i>Falco peregrinus</i>	S3

Pied-billed Grebe	<i>Podilymbus podiceps</i>	S5B
Pileated Woodpecker	<i>Dryocopus pileatus</i>	S3
Pine Grosbeak	<i>Pinicola enucleator</i>	S5
Pine Siskin	<i>Spinus pinus</i>	S5
Prairie Falcon	<i>Falco mexicanus</i>	S4
Pygmy Nuthatch	<i>Sitta pygmaea</i>	S4
Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5
Red Crossbill	<i>Loxia curvirostra</i>	S5
Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B
Redhead	<i>Aythya americana</i>	S5B
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	S4B
Red-necked Grebe	<i>Podiceps grisegena</i>	S4B
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B
Ring-necked Duck	<i>Aythya collaris</i>	S5B
Rock Wren	<i>Salpinctes obsoletus</i>	S5B
Ross's Goose	<i>Chen rossii</i>	S4N
Rough-legged Hawk	<i>Buteo lagopus</i>	S5N
Ruby-crowned Kinglet	<i>Regulus calendula</i>	S5B
Rufous Hummingbird	<i>Selasphorus rufus</i>	S4B
Ruddy Duck	<i>Oxyura jamaicensis</i>	S5B
Ruffed Grouse	<i>Bonasa umbellus</i>	S4
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S5B
Say's Phoebe	<i>Sayornis saya</i>	S5B
Sharp-tailed Grouse (Columbian)	<i>Tympanuchus phasianellus columbianus</i>	S1
Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4B
Short-eared Owl	<i>Asio flammeus</i>	S4
Snow Bunting	<i>Plectrophenax nivalis</i>	S5N
Snow Goose	<i>Chen caerulescens</i>	S4N
Solitary Vireo	<i>Vireo solitarius</i>	SNR
Song Sparrow	<i>Melospiza melodia</i>	S5B
Sora	<i>Porzana carolina</i>	S5B
Spotted Sandpiper	<i>Actitis macularius</i>	S5B
Spotted Towhee	<i>Pipilo maculatus</i>	S5B
Spruce Grouse	<i>Falcapennis canadensis</i>	S4
Steller's Jay	<i>Cyanocitta stelleri</i>	S5
Swainson's Hawk	<i>Buteo swainsoni</i>	S4B
Swainson's Thrush	<i>Catharus ustulatus</i>	S5B
Townsend's Solitaire	<i>Myadestes townsendi</i>	S5
Townsend's Warbler	<i>Dendroica townsendi</i>	S5B

Tree Swallow	<i>Tachycineta bicolor</i>	S5B
Trumpeter Swan	<i>Cygnus buccinator</i>	S3
Turkey Vulture	<i>Cathartes aura</i>	S4B
Varied Thrush	<i>Ixoreus naevius</i>	S5B
Vaux's Swift	<i>Chaetura vauxi</i>	S4B
Veery	<i>Catharus fuscescens</i>	S3B
Vesper Sparrow	<i>Poocetes gramineus</i>	S5B
Violet-green Swallow	<i>Tachycineta thalassina</i>	S5B
Warbling Vireo	<i>Vireo gilvus</i>	S5B
Western Bluebird	<i>Sialia mexicana</i>	S4B
Western Grebe	<i>Aechmophorus occidentalis</i>	S4B
Western Kingbird	<i>Tyrannus verticalis</i>	S5B
Western Meadowlark	<i>Sturnella neglecta</i>	S5B
Western Screech-Owl	<i>Megascops kennicottii</i>	S3S4
Western Tanager	<i>Piranga ludoviciana</i>	S5B
Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B
White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	S5B
White-tailed Ptarmigan	<i>Lagopus leucura</i>	S3
White-throated Swift	<i>Aeronautes saxatalis</i>	S5B
White-winged Crossbill	<i>Loxia leucoptera</i>	S4
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>	S4B
Willow Flycatcher	<i>Empidonax traillii</i>	S4B
Wilson's Phalarope	<i>Phalaropus tricolor</i>	S4B
Wilson's Warbler	<i>Wilsonia pusilla</i>	S5B
Winter Wren	<i>Troglodytes troglodytes</i>	S3
Wood Duck	<i>Aix sponsa</i>	S5B
Yellow-breasted Chat	<i>Icteria virens</i>	S5B
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	S5B
Yellow-rumped Warbler	<i>Dendroica coronata</i>	S5B
Yellow Warbler	<i>Dendroica petechia</i>	S5B
<b>Mammals - 64 Species</b>		
American Mink	<i>Mustela vison</i>	S5
Badger	<i>Taxidea taxus</i>	S4
Beaver	<i>Castor canadensis</i>	S5
Big Brown Bat	<i>Eptesicus fuscus</i>	S4
Black Bear	<i>Ursus americanus</i>	S5
Bobcat	<i>Lynx rufus</i>	S5
Bushy-tailed Woodrat	<i>Neotoma cinerea</i>	S5
California Myotis	<i>Myotis californicus</i>	S4
Canada Lynx	<i>Lynx canadensis</i>	S3



Columbian Ground Squirrel	<i>Spermophilus columbianus</i>	S5
Coyote	<i>Canis latrans</i>	S5
Deer Mouse	<i>Peromyscus maniculatus</i>	S5
Dusky or Montane Shrew	<i>Sorex monticolus</i>	S5
Elk or Wapiti	<i>Cervus canadensis</i>	S5
Fisher	<i>Martes pennanti</i>	S3
Fringed Myotis	<i>Myotis thysanodes</i>	S3
Golden-mantled Ground Squirrel	<i>Spermophilus lateralis</i>	S4
Gray Wolf	<i>Canis lupus</i>	S4
Grizzly Bear	<i>Ursus arctos</i>	S2S3
Heather Vole	<i>Phenacomys intermedius</i>	S4
Hoary Bat	<i>Lasiurus cinereus</i>	S3
Hoary Marmot	<i>Marmota caligata</i>	S3S4
Little Brown Myotis	<i>Myotis lucifugus</i>	S4
Long-eared Myotis	<i>Myotis evotis</i>	S4
Long-legged Myotis	<i>Myotis volans</i>	S4
Long-tailed Vole	<i>Microtus longicaudus</i>	S4
Long-tailed Weasel	<i>Mustela frenata</i>	S5
Marten	<i>Martes americana</i>	S4
Masked Shrew	<i>Sorex cinereus</i>	S5
Meadow Vole	<i>Microtus pennsylvanicus</i>	S5
Montane Vole	<i>Microtus montanus</i>	S5
Moose	<i>Alces americanus</i>	S5
Mountain Cottontail	<i>Sylvilagus nuttallii</i>	S4
Mountain Goat	<i>Oreamnos americanus</i>	S4
Mountain Lion	<i>Puma concolor</i>	S4
Mule Deer	<i>Odocoileus hemionus</i>	S5
Muskrat	<i>Ondatra zibethicus</i>	S5
Northern Bog Lemming	<i>Synaptomys borealis</i>	S2
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	S4
Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5
Northern River Otter	<i>Lontra canadensis</i>	S4
Pika	<i>Ochotona princeps</i>	S4
Porcupine	<i>Erethizon dorsatum</i>	S4
Raccoon	<i>Procyon lotor</i>	S5
Red Fox	<i>Vulpes vulpes</i>	S5
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5
Red-tailed Chipmunk	<i>Tamias ruficaudus</i>	S4
Short-tailed Weasel	<i>Mustela erminea</i>	S5
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	S4
Snowshoe Hare	<i>Lepus americanus</i>	S4

Southern Red-backed Vole	<i>Myodes gapperi</i>	S4
Striped Skunk	<i>Mephitis mephitis</i>	S5
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	S2
Vagrant Shrew	<i>Sorex vagrans</i>	S4
Water Shrew	<i>Sorex palustris</i>	S4
Water Vole	<i>Microtus richardsoni</i>	S4
Western Jumping Mouse	<i>Zapus princeps</i>	S4
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	S4
White-tailed Deer	<i>Odocoileus virginianus</i>	S5
White-tailed Jack Rabbit	<i>Lepus townsendii</i>	S4
Wolverine	<i>Gulo gulo</i>	S3
Yellow-bellied Marmot	<i>Marmota flaviventris</i>	S4
Yellow-pine Chipmunk	<i>Tamias amoenus</i>	S5
Yuma Myotis	<i>Myotis yumanensis</i>	S3S4
<b>Reptiles - 9 Species</b>		
Common Gartersnake	<i>Thamnophis sirtalis</i>	S4
Eastern Racer	<i>Coluber constrictor</i>	S5
Gophersnake	<i>Pituophis catenifer</i>	S5
Northern Alligator Lizard	<i>Elgaria coerulea</i>	S3
Painted Turtle	<i>Chrysemys picta</i>	S4
Prairie Rattlesnake	<i>Crotalus viridis</i>	S4
Rubber Boa	<i>Charina bottae</i>	S4
Terrestrial Gartersnake	<i>Thamnophis elegans</i>	S5
Western Skink	<i>Eumeces skiltonianus</i>	S3

## APPENDIX B. Marshall WMA Species of Concern

Common Name	Habitat	SOC	CFWCS Tier	Comments
<i>Amphibian (1)</i>				
Western Toad <i>Bufo boreas</i>	Wetlands, lakes, floodplain pools	SOC	1	Suitable aquatic and upland habitats for this species.
<i>Birds (21)</i>				
American Bittern <i>Botaurus lentiginosus</i>	Wetlands	SOC	2	Found in wetlands along the Clearwater River.
Bald Eagle <i>Haliaeetus leucocephalus</i>	Riparian forests	SOC	1	Nests at Lake Alva. Uses the Clearwater River and other lakes for foraging. Potential winter roosting sites in conifer forest stands.
Black Swift <i>Cypseloides niger</i>	Cliffs, waterfalls, forages over wetland and riparian habitats	SOC	2	Possible foraging habitat in area.
Black-backed Woodpecker <i>Picoides articus</i>	Conifer forest burns	SOC	1	Found in burned forest nearby, will use the project area after fire.
Boreal Chickadee <i>Poecile gambeli</i>	Spruce fir forest	SOC	2	Found in low numbers in the Seeley-Swan valley.
Cassin's Finch <i>Carpodacus cassinii</i>	Conifer Forest	SOC	2	Verified near area during bird point counts.
Clark's Nutcracker <i>Nucifraga columbiana</i>	Conifer forests	SOC	3	Uses conifer forests in the area, newly-added to the Montana SOC list.
Common Loon <i>Gavia immer</i>	Mountain lakes with emergent vegetation	SOC	1	Lake Marshall used for foraging, Lakes Alva and Inez used for nesting.
Flammulated Owl <i>Otus flammeolus</i>	Conifer forests	SOC	1	Uses conifer forests in the area for nesting and foraging.
Golden Eagle <i>Aquila chrysaetos</i>	Cliffs, open forests, grasslands, subalpine	SOC	2	Suitable nesting and foraging habitat, not verified in area.
Great Blue Heron <i>Ardea herodias</i>	Wetlands, riparian	SOC	3	Nesting rookery at Lake Inez, foraging habitat in area

<b>Common Name</b>	<b>Habitat</b>	<b>SOC</b>	<b>CFWCS Tier</b>	<b>Comments</b>
Great Gray Owl <i>Strix nebulosa</i>	Conifer forests	SOC	1	Species documented on the project area, nearest documented nest is 13 miles NE.
Hooded Merganser <i>Lophodytes cucullatus</i>	Riparian forests	PSOC	2	Found along Clearwater River
Northern Goshawk <i>Accipiter gentiles</i>	Mixed conifer forest	SOC	2	Uses conifer forests in the area for nesting and foraging.
Olive-sided Flycatcher <i>Contopus cooperi</i>	Early seral forest/shrub patches, burned forest		1	Documented in suitable habitat throughout the area.
Peregrine Falcon <i>Falco peregrinus</i>	Cliffs (nesting), riparian forests & wetlands (foraging)	SOC	2	Riparian and wetland habitats potentially used for foraging by migrating birds.
Pileated Woodpecker <i>Dryocopus pileatus</i>	Conifer forests with large trees	SOC	2	Verified on the area, suitable habitat.
Trumpeter Swan <i>Cygnus buccinator</i>	Shallow lakes with submerged and emergent vegetation and low disturbance levels.	SOC	1	Reintroduction programs in nearby Mission and Blackfoot Valleys, habitats for this species found primarily along the Clearwater River.
Veery <i>Catharus fuscescens</i>	Riparian	SOC	2	Found along the Clearwater River.
Western Screech-Owl <i>Megascops kennicottii</i>	Riparian forests	PSOC	3	Potential habitat, not verified.
White-tailed Ptarmigan <i>Lagopus leucura</i>	Alpine	SOC	2	Present in Swan Mountains and probably present in Mission mountains.
<i>Fish (2)</i>				
Bull Trout <i>Salvelinus confluentus</i>	Mountain streams, rivers, lakes	SOC	1	Project area is the key spawning and rearing area for adfluvial population in Clearwater drainage.
Westslope Cutthroat Trout <i>Oncorhynchus clarkii lewisi</i>	Mountain streams, rivers, lakes	SOC	1	Abundant populations in project area with both stream-resident and migratory components, and high genetic purity.
<i>Mammals (12)</i>				
Canada Lynx <i>Lynx Canadensis</i>	Subalpine conifer forests	SOC	1	The Clearwater Lands Project, and the project parcel in particular, contains some of the highest quality, currently unprotected, Canada lynx habitat in the western US
Fisher <i>Martes pennanti</i>	Mixed conifer forests	SOC	2	Fisher are resident within the proposed WMA.
Fringed Myotis <i>Myotis thysanodes</i>	Riparian and dry mixed conifer	SOC	2	Potential habitat, but insufficient surveys to determine presence or

Common Name	Habitat	SOC	CFWCS Tier	Comments
	forests			absence in project area.
Gray Wolf <i>Canis lupus</i>	Generalist	SOC	1	Commonly observed within the proposed WMA.
Grizzly Bear <i>Ursus arctos horribilis</i>	Generalist	SOC	1	The subject parcel provides important post-emergence foraging habitat, contains federally designated Recovery Area, is adjacent to modeled denning habitat, and serves as a critical movement corridor.
Hoary Bat <i>Lasiurus cinereus</i>	Riparian and conifer forests	SOC	2	Uses mature trees (conifer or broadleaf) for roosting. Forages over forest canopy, wetlands, and water.
Hoary Marmot <i>Marmota caligata</i>	Alpine	PSOC	1	Found in Mission Mountains, not yet verified on the property.
Northern Bog Lemming <i>Synaptomys borealis</i>	Wetlands (peatlands)	SOC	1	Potential habitat present, wetlands in area have not yet been surveyed for the species.
Silver-haired Bat <i>Lasionycteris noctivagans</i>	Conifer and riparian forests	PSOC	2	Suitable habitat, presence not yet verified.
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	Caves and mines (roosting), riparian, wetlands, forests (foraging)	SOC	1	Project area has foraging habitat, but no known roosting habitat.
Wolverine <i>Gulo gulo</i>	Conifer forests	SOC	2	Species routinely detected on the property and the project area falls within a critical habitat linkage zone between the Mission Mountains and Bob Marshall Wilderness Complex.
Yuma Myotis <i>Myotis yumaensis</i>	Riparian and mixed forests near water	PSOC	2	Potential habitat, not verified (difficult to identify).
<i>Mollusk (1)</i>				
Western Pearlshell <i>Margaritifera falcata</i>	Mountain streams/rivers	SOC	1	Recent surveys indicate that Marshall Creek and the Clearwater River provide some of the highest quality western pearlshell habitat in Montana.